

## Claims

What is claimed is:

5           1.       A screening assay for the identification of specific small organic molecule which acts as an antimicrobial by inhibiting or uncoupling enzyme I comprising:

          a) adding a test compound to a reaction mixture containing enzyme I and phosphoenolpyruvate; and  
          b) measuring pyruvate levels in the presence of lactate dehydrogenase and NADH,  
10       where increased levels of pyruvate serve as an indication that the test compound has uncoupling or inhibitory activity of enzyme I of the bacterial phosphotransferase system.

          2.       A screening assay for the identification of specific small organic molecule which acts as an antimicrobials by inhibiting or uncoupling enzyme I comprising:

15           a) adding a test compound to a reaction mixture containing enzyme I and phosphoenolpyruvate and a radiolabeled N-acetylglucoseamine phosphate acceptor or glucose;

          b) isolating the terminal phosphate acceptor and measuring the level of phosphorylation of the phosphate acceptor, where decreased levels of phosphorylation serve  
20       as an indication that the test compound has uncoupling or inhibitory activity on enzyme I of the bacterial phosphotransferase system.

          3.       The assay of Claim 2 where the terminal phosphate acceptor is N-acetyl glucosamine.

25           4.       The assay of Claim 2 where the terminal phosphate acceptor is glucose.

          5.       The assay of Claim 1 or 2 wherein the small organic molecule is synthesized from a combinatorial library.

30           6.       The assay of Claim 1 or 2 wherein the small organic molecule has a molecular weight under 1,500.